

What is claimed is:

1. An instrument system for reducing displacement between adjacent bony structures, comprising:

an inserter engageable to a connecting element to percutaneously position the connecting element adjacent an anchor securable to at least one of the adjacent bony structures; and

at least one anchor extension mountable to the anchor, wherein said anchor is manipulatable percutaneously with said at least one anchor extension to position said anchor for engagement with said connecting element, said at least one anchor extension including a first member and a second member, said second member being mountable to said anchor, and said first member and said second member being movable relative to one another to contact said connecting element with said first member and move said anchor and said connecting element toward one another.

2. The instrument system of claim 1, further comprising a second anchor extension mountable with a second anchor securable to the other of the adjacent bony structures, wherein said second anchor is manipulatable percutaneously with said second anchor extension to position said second anchor for engagement with said connecting element.

3. The instrument system of claim 2, wherein said inserter is movably mountable to said at least one of said anchor extension to move said connecting element along an insertion axis to a position adjacent said anchors.

4. The instrument system of claim 3, wherein said connecting element is moved in a direction transverse to said insertion axis with said first member of said at least one anchor extension as said connecting element and said anchor are moved toward one another.

5. The instrument system of claim 2, wherein during use said connecting element is engageable to said second anchor before said connecting element is moved toward said anchor with said first member of said at least one anchor extension.

6. The instrument system of claim 2, wherein said connecting element includes a length adapted to extend between said first and second anchors.

7. The instrument system of claim 1, wherein said second member includes a pair of jaws movable relative to one another to releasably engage said anchor therebetween.

8. The instrument system of claim 7, wherein each of said jaws includes a protrusion extending therefrom toward the other of said pair jaws, said protrusions being received in aligned receptacles of said anchor when said second member is mounted thereto.

9. The instrument system of claim 7, wherein said first member is coupled to said pair of jaws, said pair of jaws moving between an open position and a closed position in correspondence with a relative positioning between said first member and said second member.

10. The instrument system of claim 1, wherein said first member is an outer sleeve with a passage and said second member is movably mounted in said passage of said first member.

11. The instrument system of claim 10, wherein said first member includes a proximal housing portion, and further comprising a drive member rotatably received in said housing portion in engagement with said second member, said drive member being operable to move said first and second members relative to one another.

12. The instrument system of claim 10, wherein said anchor extension includes a locking mechanism to releasably secure said first and second members in position relative to one another.

13. The instrument system of claim 12, wherein said first member is engaged with said second member to manipulate a distal portion of said second member between an

open configuration to receive the anchor and a mounting configuration to mount the anchor thereto as said second member is displaced proximally relative said first member.

14. The instrument system of claim 13, wherein said locking mechanism includes a lock button pivotally mounted to said first member, said lock button being movable to a first orientation relative to said first member and into engagement with said second member to provide an indication that said second member is in said mounting configuration.

15. The instrument system of claim 14, wherein from said mounting configuration said lock button is movable out of said first orientation as said second member is proximally displaced relative to said first member.

16. The instrument system of claim 15, wherein lock button returns to said first orientation when said second member is proximally displaced to a complete reduction configuration relative to said first member.

17. The instrument system of claim 16, wherein said lock button include a lock member projecting therefrom and engageable in a proximal notch in said second member when in said mounting configuration and engageable in a distal notch in said second member when in said complete reduction configuration.

18. The instrument system of claim 16, wherein said lock button is biased toward said first orientation.

19. The instrument system of claim 1, wherein said connecting element includes a proximal portion, a distal portion, and a flexible intermediate portion therebetween.

20. The instrument system of claim 1, wherein said anchor is a multi-axial screw with a screw portion and a yoke pivotally mounted to said screw portion, said second member being mountable to said yoke.

21. An instrument system for reducing displacement between adjacent vertebrae, comprising:

a first anchor extension mountable to a first anchor secured to a first vertebra;

a second anchor extension mountable to a second anchor secured to a second vertebra;

and

a connecting element positionable between the first anchor and the second anchor, wherein said second anchor extension includes a first member and a second member movable relative to one another, said second member being mountable with the second anchor, said first member being movable relative to said second member to contact said connecting element and move said connecting element toward the second anchor.

22. The instrument system of claim 21, further comprising an inserter movably coupled to at least one of said first and second anchor extensions, said connecting element being removably coupled to said inserter.

23. The instrument system of claim 22, wherein said inserter is movable from a first position wherein said connecting element is remotely positioned relative to the first and second anchors to a second position wherein said connecting element is moved along an insertion axis for positioning adjacent the first and second anchors.

24. The instrument system of claim 23, wherein said connecting element is moved by said first member toward the second anchor in a direction transverse to said insertion axis.

25. The instrument system of claim 21, wherein said connecting element includes a proximal portion, a distal portion, and a flexible intermediate portion therebetween.

26. The instrument system of claim 21, wherein the first and second anchors are multi-axial screws with a screw portion and a yoke pivotally mounted to said screw portion, said first and second anchor extensions being mountable to said yoke.

27. The instrument system of claim 21, wherein said first member is an outer sleeve with a passage and said second member is movably received in said passage of said first member.

28. The instrument system of claim 27, wherein said first member includes a proximal housing portion, and further comprising a drive member rotatably received in said housing portion in engagement with said second member, said drive member being operable to move said second member relative to said first member.

29. The instrument system of claim 27, wherein said anchor extension includes a locking mechanism to releasably secure said first and second members in position relative to one another.

30. The instrument system of claim 29, wherein said first member is engaged with said second member to manipulate a distal portion of said second member between an open configuration to receive the second anchor and a mounting configuration to mount the second anchor thereto as said second member is displaced proximally relative said first member.

31. The instrument system of claim 30, wherein said locking mechanism includes a lock button pivotally mounted to said first member, said lock button being movable to a first orientation relative to said first member to provide an indication that said second member is said mounting configuration.

32. The instrument system of claim 31, wherein from said mounting configuration said lock button is movable out of said first orientation as said second member is proximally displaced relative to said first member.

33. The instrument system of claim 32, wherein lock button returns to said first orientation when said second member is proximally displaced to a complete reduction configuration relative to said first member.

34. The instrument system of claim 33, wherein said lock button include a lock member projecting therefrom and engageable in a proximal notch in said second member when in said mounting configuration and engageable in a distal notch in said second member when in said complete reduction configuration.

35. An instrument facilitating placement of an implant adjacent an anchor, comprising:

a first member and a second member movably engaged in a passage of said first member, said second member including a proximal sleeve portion and a pair of jaws pivotally coupled to a distal end of said sleeve portion, said pair of jaws each including an body and an anchor coupler at a distal end of said body, said pair of jaws being linked to said first member, wherein said jaws are movable between an open configuration for receiving an anchor and a mounting configuration for gripping an anchor therebetween as said second member is displaced proximally relative to said first member.

36. The instrument of claim 35, wherein said first member includes a proximal sleeve portion and a pair of arms extending distally therefrom, said pair of arms defining a slot therebetween for receiving said pair of jaws.

37. The instrument of claim 36, wherein said pair of arms of said first member each includes a reducing member at a distal end thereof.

38. The instrument of claim 35, wherein said jaws form a passage therebetween, said jaws each including a recessed portions in said body thereof spaced proximally of said anchor coupler, said recessed portions forming an enlarged portion of said passage.

39. The instrument of claim 35, wherein each of said anchor couplers of said jaws includes a protrusion extending therefrom toward the other of said pair jaws, said protrusions being received in aligned receptacles of the anchor when said second member is mounted thereto.

40. The instrument of claim 35, wherein each of said bodies of said jaws includes an elongated slot extending therethrough, and further comprising a pin extending through each of said slots, said pins being engaged to said first member and movable along said elongated slots as said second member is moved relative to said first member.

41. The instrument of claim 40, wherein said elongated slots include proximal portions extending proximally toward one another, and distal portions extending parallel to one another distally from said proximal portions.

42. The instrument of claim 35, wherein said first member includes a proximal housing portion, and further comprising a drive member rotatably received in said housing portion in engagement with said second member, said drive member being operable to move said first and second members relative to one another.

43. The instrument of claim 35, further comprising a locking mechanism to releasably secure said first and second members in position relative to one another.

44. The instrument of claim 43, wherein said locking mechanism includes a lock button pivotally mounted to said first member, said lock button being movable to a first orientation relative to said first member to provide an indication that said second member is said mounting configuration.

45. The instrument of claim 44, wherein from said mounting configuration said lock button is movable out of said first orientation as said second member is displaced proximally relative to said first member.

46. The instrument of claim 45, wherein said lock button returns to said first orientation when said second member is displaced proximally to a complete reduction configuration relative to said first member.

47. The instrument of claim 46, wherein said lock button include a lock member projecting therefrom and engageable in a proximal notch in said second member when in said mounting configuration and engageable in a distal notch in said second member when in said complete reduction configuration.

48. The instrument of claim 46, wherein said lock button is biased toward said first orientation.

49. The instrument of claim 45, wherein:  
in said mounting configuration said first member includes a pair of opposite reducing members at a distal end thereof between said pair of jaws spaced proximally from said anchor couplers; and  
said first and second members are movable relative to one another toward a reduction configuration wherein said reducing members are received between said anchor couplers of said second member.

50. An instrument system for stabilizing adjacent vertebrae, comprising:  
an inserter engageable to a connecting element; and  
at least one anchor extension mountable with an anchor secured to a vertebra, wherein said inserter is movably mountable to said at least one anchor extension to move said connecting element along an insertion axis to a position adjacent said anchor, wherein said at least one anchor extension includes a first body and a second body coupled to said anchor, said first and second bodies forming a passage therebetween adapted to receive said connecting element therethrough along the insertion axis at a location spaced proximally from a proximal end of said anchor.

51. The system of claim 50, wherein said at least one anchor extension includes a first member and a second member movable relative to one another, said first and second bodies extending distally from said second member and said first member being movable relative to said second member to contact said connecting element and move said connecting element distally along said passage toward said anchor.



52. The system of claim 50, wherein said first and second bodies each include an anchor coupler at a distal end thereof, said first and second bodies being movable toward and away from one another to selectively grip and release said proximal end of said anchor between said anchor couplers.

53. The system of claim 50, wherein said bodies are structured to form an enlarged passage portion therebetween at a location along said insertion axis.

54. The system of claim 53, wherein said connecting element includes a proximal portion, a distal portion, and an enlarged intermediate portion extending therebetween.

55. The system of claim 54, wherein said enlarged passage portion is sized to receive said enlarged intermediate portion therethrough, and said proximal and distal portions are positionable in said passage between said proximal end of said anchor and said enlarged passage portion.

56. The system of claim 53, wherein said enlarged passage portion is formed by concavely curved surfaces of said first and second bodies, said concavely curved surfaces being oriented toward one another.

57. The instrument system of claim 50, further comprising a second anchor extension mountable to a second anchor secured to a second vertebra, said inserter being movably mountable with said second anchor extension.

58. The instrument system of claim 57, wherein said connecting element includes a length adapted to extend between said first and second anchors.

59. A spinal stabilization element, comprising:  
an elongate member extending along a longitudinal axis, said elongate member being curved along said longitudinal axis between a distal portion and a proximal portion, said

distal and proximal portions each being engageable to an anchor secured to respective ones of first and second vertebrae, said distal and proximal portions being movable relative to one another when secured to the anchors.

60. The stabilization element of claim 59, wherein said proximal and distal portions are rigid, and further comprising a flexible intermediate portion therebetween.

61. The stabilization element of claim 60, wherein said proximal and distal include a first cross-sectional dimension and said flexible intermediate portion includes a second cross-sectional dimension greater than said first cross-sectional dimension.

62. The stabilization element of claim 60, wherein said proximal portion includes an indexed configuration for engagement with an insertion instrument in a predetermined orientation.

63. The stabilization element of claim 60, further comprising a coupling member extending through said intermediate portion and engaged to said proximal and distal portions.

64. The stabilization element of claim 63, wherein said coupling member is selected from the group consisting of: a rod, a wire, a tether, a suture and a cord.

65. The stabilization element of claim 63, wherein said coupling member includes a stop member at each end thereof to secure said coupling member to respective ones of said proximal and distal portions.

66. The stabilization element of claim 65, wherein said stop member is recessed in said proximal and distal portions.

67. The stabilization element of claim 66, wherein said stop members float in said proximal and distal portions in response to compression of said intermediate portion.

68. The stabilization element of claim 63, further comprising a coupling pin in each of said proximal and distal portions, said coupling pins intersecting said coupling member to secure said coupling member in said proximal and distal portions.

69. The stabilization element of claim 59, wherein said proximal and distal portions each include recesses in outer surfaces thereof.

70. A spinal stabilization element, comprising:  
an elongate member extending along a longitudinal axis, said elongate member including a distal portion, a proximal portion, and an intermediate portion extending therebetween, said distal and proximal portions being substantially rigid and each being engageable to respective ones of first and second anchors engageable to first and second vertebrae, said intermediate portion being flexible and permitting movement of said distal and proximal portions relative to one another when secured to the anchors.

71. The spinal stabilization element of claim 70, wherein said elongate member is curved along said longitudinal axis.

72. The spinal stabilization element of claim 70, wherein said intermediate portion includes an enlarged cross-section relative to said proximal and distal portions.

73. The stabilization element of claim 70, further comprising a coupling member extending through said intermediate portion and engaged to said proximal and distal portions.

74. A method for stabilizing a spinal motion segment, comprising:  
securing a first anchor to a first vertebra;  
securing a second anchor to a second vertebra;

positioning a flexible connecting element between the first and second anchors;  
moving at least one of the first and second anchors and the flexible connecting element toward one another; and  
securing the flexible connecting element to the first and second anchors.

75. The method of claim 74, wherein positioning the flexible connecting element includes percutaneously guiding the flexible connecting element from a location remote from the first and second anchors along an insertion axis to a location between the first and second anchors.

76. The method of claim 74, wherein moving at least one of the first and second anchors and the flexible connecting element toward one another includes moving transversely to the insertion axis.

77. The method of claim 74, wherein positioning the flexible connecting element includes positioning the flexible connecting element in a passage between a pair of jaws of an anchor extension extending proximally from one of said first and second anchors.

78. The method of claim 77, wherein said pair of jaws each include an arm and a distal anchor coupler at a distal end of said arm, said anchor couplers engageable to said at least one anchor with said passage extending proximally from said at least one anchor.

79. The method of claim 78, wherein said passage includes an enlarged portion to accommodate passage an enlarged portion of said flexible connecting element therethrough.

80. A method for reducing a displaced spinal motion segment, comprising:  
securing a first anchor to a first vertebra;  
securing a second anchor to a second vertebra;  
coupling a first anchor extension to the first anchor;  
coupling a second anchor extension to the second anchor;  
engaging a connecting element to one of the first and second anchors; and

manipulating the anchor extension of the other of the first and second anchors to reduce spondylolisthesis between the first and second vertebrae.

81. The method of claim 80, further comprising engaging the connecting element to the other of the first and second anchors after manipulating the anchor extension.

82. The method of claim 81, wherein the connecting element is flexible to permit motion between the adjacent vertebrae after engaging the connecting element to the first and second anchors.

83. The method of claim 80, wherein the connecting element is moved along a percutaneous insertion path for placement between the first and second anchors.

84. The method of claim 83, further comprising an inserter pivotally mountable to said pair of anchor extension, the connecting element being releasably engageable to the inserter and movable therewith along the insertion path.

85. The method of claim 80, further comprising percutaneously positioning the connecting element between the first and second anchor extensions to a position adjacent the first and second anchors.

86. The method of claim 80, wherein:  
the first anchor extension is coupled to the first anchor before securing the first anchor to the first vertebra; and  
the second anchor extension is coupled to the second anchor before securing the second anchor to the second vertebra.

87. A method for reducing a displaced spinal motion segment, comprising:  
securing a first anchor to a first vertebra;  
securing a second anchor to a second vertebra;  
percutaneously placing a connecting element between the first and second anchors;

engaging the connecting element to the first anchor;  
reducing displacement between the first and second vertebrae; and  
engaging the connecting element to the second anchor.

88. The method of claim 87, wherein reducing displacement includes manipulating an anchor extension mounted to the second anchor to move the second anchor and the connecting element toward one another.

89. The method of claim 88, wherein the anchor extension includes a first member and a second member movable relative to one another, the second member being mountable to the second anchor and the first member being movable relative to the first member and into contact with the connecting element to direct the connecting element toward the second anchor.

90. The method of claim 87, wherein the connecting element includes a flexible portion between the first and second anchors.

91. An instrument system for reducing displacement between adjacent vertebrae, comprising:

an inserter engageable to a connecting element; and

at least one anchor extension mountable with an anchor secured to a vertebra, wherein said inserter is movably mountable to said at least one anchor extension to move said connecting element along an insertion axis to a position adjacent said anchor, wherein said at least one anchor extension includes a first member and a second member, said second member being mountable to said anchor and said first member and said second member being movable relative to one another to contact said connecting element with said first member and move said anchor and said connecting element toward one another in a direction transverse to said insertion axis.

92. The instrument system of claim 91, further comprising a second anchor extension mountable to a second anchor secured to a second vertebra, said inserter being movably mountable with said second anchor extension.

93. The instrument system of claim 91, wherein said connecting element includes a length adapted to extend between said first and second anchors.

94. The instrument system of claim 93, wherein said connecting element is secured to said second anchor before moving said anchor and said connecting element toward one another with said second member.

95. The instrument system of claim 91, wherein said insertion axis is curved about a radius along a percutaneous insert path.

96. The instrument system of claim 91, wherein said first member is an outer sleeve with a passage and said second member is movably mounted in said passage of said first member.

97. The instrument system of claim 91, wherein said first member includes a proximal housing portion, and further comprising a drive member rotatably received in said housing portion in engagement with said second member, said drive member being operable to move said first and second members relative to one another.

98. The instrument system of claim 96, wherein said anchor extension includes a locking mechanism to releasably secure said first and second members in position relative to one another.

99. The instrument system of claim 98, wherein said first member is engaged with said second member to manipulate a distal portion of said second member between an open configuration to receive the anchor and a mounting configuration to mount the anchor thereto as said second member is displaced proximally relative said first member.

100. The instrument system of claim 99, wherein said locking mechanism includes a lock button pivotally mounted to said first member, said lock button being movable to a first orientation relative to said first member and into engagement with said second member to provide an indication that said second member is in said mounting configuration.

101. The instrument system of claim 100, wherein from said mounting configuration said lock button is movable out of said first orientation as said second member is proximally displaced relative to said first member.

102. The instrument system of claim 101, wherein lock button returns to said first orientation when said second member is proximally displaced to a complete reduction configuration relative to said first member.

103. The instrument system of claim 102, wherein said lock button include a lock member projecting therefrom and engageable in a proximal notch in said second member when in said mounting configuration and engageable in a distal notch in said second member when in said complete reduction configuration.

104. The instrument system of claim 102, wherein said lock button is biased toward said first orientation.

105. The instrument system of claim 91, wherein said connecting element includes a proximal portion, a distal portion, and a flexible intermediate portion therebetween.